

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A system for determining a bit error rate of bits in a digital communication system, comprising:

- a transmitting station;
- a receiving station having a decoder (102);
- the transmitting station arranged for transmitting a bit sequence to a receiving station;
- the receiving station arranged for receiving the bit sequence (S1) ;
- the decoder (102) arranged for decoding one or more bits out of the received bit sequence;
- a plurality of look-up tables (104, 105) arranged for containing predetermined bit error rates related to ranges of soft output values;

~~characterised in that the system further comprises:~~

- a quantizer (103) being arranged for quantizing the received bit (S2);
- a switch (106) being arranged for selecting an output, (S7, S8) representing a Bit error Rate contribution, of one of the look up tables (104, 105) out of the plurality of look up tables, the selection being based on the quantized bit (S6);
- a soft-output (S5) of the decoder (102) being arranged as an index to the plurality of look up tables (104, 105) for retrieving a bit-wise bit error rate contribution to the bit error rate of a received bit sequence; and
- a summing and scaling device (107) being arranged for accumulating and averaging the bit-wise BER (S9).

2. (Currently Amended) The system as claimed in claim 1, wherein the lookup tables (104, 105) are replaced by one or more processing devices, arranged for

providing accompanying values for the Bit Error Rate contribution (~~S7, S8~~) on input of the value of the soft output (~~S5~~).

3. (Original) The system as claimed in claim 2, wherein the processing device is a floating point processor.

4. (Original) The system as claimed in claim 1, wherein the decoder is a turbo-decoder.

5. (Original) The system as claimed in claim 1, wherein the decoding algorithm is the Maximum A Posteriori algorithm (MAP).

6. (Original) The system as claimed in claim 1, wherein the decoding algorithm is the Logarithmic Maximum A Posteriori algorithm (LOG-MAP).

7. (Original) The system as claimed in claim 1, wherein the decoding algorithm is the Maximum-Logarithmic-Maximum A Posteriori algorithm (MAX-LOG-MAP).

8. (Original) The system as claimed in claim 1, wherein the decoding algorithm is the Soft Output Viterbi Algorithm (SOVA).

9. (Currently Amended) A receiving station system arranged for determining a bit error rate ~~of bits~~ in transmitted bit sequence, comprising:

- a decoder (~~102~~) arranged for decoding one or more bits out of the received bit sequence;
- a plurality of look-up tables (~~104, 105~~) arranged for containing predetermined bit error rates related to ranges of soft output values ;

~~characterised in that the system further comprises:~~

- a quantizer (~~103~~) being arranged for quantizing the received bit (~~S2~~);

- a switch (106) being arranged for selecting an output (S7, S8) representing a Bit Error Rate contribution, of one of the plurality of look up tables (104, 105) ~~out of the a plurality of look up tables~~, the selection being based on the quantized bit (S6);
- a soft-output (S5) of the decoder (102) being arranged as an index to the plurality of look up tables (104, 105) for retrieving a bit-wise bit error rate contribution to the bit error rate of a received bit sequence;
- a summing and scaling device (107) being arranged for accumulating and averaging the bit-wise BER (S9).

10. (Original) The receiving station system as claimed in claim 9, wherein the receiving station system is a mobile unit within a wireless communication system.

11. (Original) The receiving station system as claimed in claim 9, wherein the receiving station is a radio base station within a CDMA communication system.

12. (Currently Amended) The receiving station system as claimed in claim 9 ~~claims 9, 10 and 11~~, wherein the receiving station system operates in a wireless communication network according to a GSM, Bluetooth, or Code Division Multiple Access (CDMA) standard.

13. (Currently Amended) A method for determining a bit error rate ~~of bits~~ in a digital communication system comprising a transmitting station and a receiving station having a decoder (102), comprising the steps of:

- transmitting a bit sequence to the receiving station by the transmitting station;
- receiving the bit sequence by the receiving station;
- decoding a bit out of the received bit sequence by the decoder (102),
~~characterised in that the method further comprises the steps of:~~
- quantizing the received bit (S2) by a quantizer (103) ;
- selecting an output (S7, S8) of a look up table, the look up table being one out of a plurality of look up tables (104, 105), ~~by a switch (106)~~, the selection being based on the quantized bit (S6);

- indexing the selected look up table (~~104,105~~), for obtaining a bit-wise bit error rate of the received bit sequence, by the soft-output (~~S5~~) of the decoder(~~102~~) ;
- accumulating and averaging the bit-wise BER (~~S9~~) of the received bit sequence by a summing and scaling device (~~107~~), resulting in the estimated average BER(~~S10~~).

14. (Original) The method as claimed in claim 13, wherein the decoding method is turbo-decoding.

15. (Original) The method as claimed in claim 13, wherein the decoding algorithm is the Maximum A Posteriori algorithm (MAP).

16. (Original) The method as claimed in claim 13, wherein the decoding algorithm is the Logarithmic Maximum A Posteriori algorithm (LOG-MAP).

17. (Original) The method as claimed in claim 13, wherein the decoding algorithm is the Maximum-Logarithmic-Maximum A Posteriori algorithm (MAX-LOG-MAP).

18. (Original) The method as claimed in claim 13, wherein the decoding algorithm is the Soft Output Viterbi Algorithm (SOVA).